CLAIMS

What is claimed is:

1.   A method for determining subjective quality of a packetized media data stream having packets of encoded data, each of said packets having a header portion and a data portion each having content, comprising the following steps:

copying a portion of said packetized media data stream to obtain copied packets;

5   replacing the content of the data portion of said copied packets with a packetized known test signal, said copied packets thereby comprising a pseudo-media stream;

determining subjective quality of said pseudo-media stream; and

using said subjective quality of said pseudo-media stream, to determine subjective quality of said packetized data stream.

2.   The method for determining subjective quality of a packetized data stream of claim 1, wherein each packet copied from said packetized data stream is timestamped and said timestamping is used to control the temporal relationship between said copied portion of said packetized media data stream and said pseudo-media stream.

3.   A method for determining subjective quality of a packetized data stream having packets of encoded data, each of said packets having a header portion and a data portion each having some content, comprising the following steps:

copying a portion of said packetized data stream to obtain copied packets;

5   timestamping each packet included within said packetized data stream as it is copied;

emptying data content of the data portion of each copied packet;

loading a known test signal into each emptied packet;

using said timestamping to maintain a temporal sequence of the loading to

10   produce a pseudo-media stream;

depacketizing and decoding said pseudo-media stream to obtain a pseudo-media

signal; and

determining said subjective quality of said pseudo-media signal that represents the

subjective quality of said packetized data stream.

4.   The method for determining subjective quality of a packetized data stream

of claim 3, further comprising:

determining packetization methodology used to packetize said data stream; and

utilizing said packetization methodology to packetize said known test signal prior

5   to loading said known test signal into said empty packets.

5.   The method for determining subjective quality of a packetized data stream

of claim 3, wherein each of said header portion contains a source identifier; and where

said method further comprises separating said copied packetized data stream by source

using said source identifier portion of each copied packet.

5   6.   The method for determining subjective quality of a packetized data stream

of claim 5, wherein said header portion of each copied packet includes a sequence

number and said sequence number is used to determine which packetized known test

signal packet replaces a copied media stream packet for said pseudo-media stream.

7.   The method for determining subjective quality of a packetized data stream

10   of claim 6, wherein order of the sequence numbers is maintained in substituting said

packetized known test signal for the data contained in each copied packet.

8.   A method for determining subjective quality of a multi-media-source

packetized data stream of packets each having data content, said method comprising the

15   following steps:

copying a portion of said multi-media-source packetized data stream to obtain

copied packets;

timestamping each of said copied packets to obtain timestamped copied packets;

separating said copied packets according to their respective media sources to

20   obtain a separated multi-media stream;

selecting a media stream from said separated multi-media stream to obtain a

selected media stream;

identifying encoding/decoding and packetization/depacketization methods used on

said selected media stream;

25   replacing said data content of each copied packet in said selected media stream

with a packetized known test signal while maintaining the sequence of said copied

packets to produce a pseudo-media stream;

depacketizing and decoding said pseudo-media stream using said timestamped

copied packets to maintain the same temporal sequence as that with which the packets

30   were originally copied to produce a pseudo-media signal; and

measuring subjective quality of said pseudo-media signal to determine subjective

quality of said selected media stream.

9.   A system for measuring subjective quality of a real-time packetized media stream in a packet-switching network comprising:

means for copying a portion of said media stream from said packet-switching network;

5   means for emptying a payload portion of selected packets from said copied media stream portion, resulting in empty payload portions of the selected packets;

means for reloading the empty payload portions of the selected packets with a known media signal to produce a pseudo-media stream;

means for depacketizing and decoding said pseudo-media stream to produce a

10   pseudo-media signal; and

means for measuring the subjective quality of said pseudo-media signal and in turn the subjective quality of said packetized media stream.

10.   The system for measuring subjective quality of a real-time packetized media stream in a packet-switching network of claim 9, further comprising:

15   means for timestamping each packet copied from said media stream, and

means for using said timestamp on said copied packet to coordinate the loading of said known media signal into said emptied packets.

11.   The system for measuring subjective quality of a real-time packetized media stream in a packet-switching network of claim 9, further comprising:

means for determining encoding and packetizing method used to prepare the packets in said copied media stream; and

5   means for using said encoding and packetizing method to prepare the packets containing the known media signal.

12.   A system for measuring subjective quality of a real-time packetized media stream in a packet-switching network of claim 9, further comprising:

means for determining decoding and depacketizing methods to be used with said
10   copied media stream; and

means for using said decoding and depacketizing methods on said known media signal.

13.   A system for measuring subjective quality of a real-time packetized media stream in a packet-switching network of claim 9, further comprising:

15   means for determining the encoding/decoding and packetization/depacketization methods used with the copied packets in said media stream; and

means for using encoding/decoding and packetization/depacketization methods in handling the packets of the known media signal in the preparation of said pseudo-media stream.

14. An apparatus for measuring subjective quality of information contained in a packetized data stream comprising:

a first device that copies a portion of said packetized data stream;

a second device that substitutes a known test signal for the information contained in the copied portion of said packetized data stream to produce a pseudo-media stream;

a third device that depacketizes and decodes said pseudo-media stream to produce a pseudo-media signal; and

a fourth device that determines subjective quality of said pseudo-media signal and subjective quality of the information contained in said packetized data stream.

15. The apparatus for measuring subjective quality of information contained in a packetized data stream of claim 14, wherein said second device includes:

means for emptying the information content of each of said copied packet; and

means for loading a packetized known test signal into each of said empty packets.

16.   An apparatus for measuring subjective quality of the information contained in a single packetized data stream included in a multi-source packetized data stream comprising:

a first device for copying a portion of said multi-source packetized data stream;

5   a second device for separating a single packetized data stream from said copied portion of said multi-source packetized data stream;

a third device for replacing the information content of each copied packet with a known signal to create a pseudo-media stream;

a fourth device for depacketizing and decoding said pseudo-media stream to 10   produce a pseudo-media signal; and

a fifth device for measuring the subjective quality of said pseudo-media signal and in-turn the subjective quality of the information contained in said single packetized data stream.

17.   An apparatus for measuring the subjective quality of the information contained in a single packetized data stream included in a multi-source packetized data streaming as set forth in claim 16, wherein said second device reads a source identifier contained in each copied packet; and diverts selected packets having a common source 5   identifier.

18.   An apparatus for measuring the subjective quality of the information contained in a single packetized data stream included in a multi-source packetized data streaming as set forth in claim 16 wherein said third device empties the information content of each packet of said separated single packetized data stream and loads a

10   packetized known test signal into said empty packets.

19.   An apparatus for measuring subjective quality of the information contained in a single packetized data stream included in a multi-source packetized data streaming as set forth in claim 16 including:

means for identifying the encoding/decoding and packetization/depacketization

15   methods used on and to be used on the information contained in said single packetized data stream, and means for using said encoding and packetization methods in the preparation of said pseudo-media stream; and

means for using said decoding and depacketization methods in the preparation of said pseudo-media signal.

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20.   An apparatus that measures subjective quality of information contained in a packetized media stream containing a plurality of packets, each of said packets having a header portion and a payload portion, comprising:

a first device that copies a segment of said packetized media stream;

25   a second device that substitutes a known test signal for the payload portion of said packets in said copied media stream segment and creates a pseudo-media stream;

a third device that depacketizes and decodes said pseudo-media stream to produce a pseudo-media signal; and

a fourth device that determines subjective quality of said pseudo-media signal and
30   subjective quality of the information contained in said packetized media stream.

21.   The apparatus of claim 20, wherein said copied segment of the packetized media stream is stored in a memory.

22.   The apparatus of claim 20, wherein said second device determines the encoding scheme of said packetized media stream.

35   23.   The apparatus of claim 20, wherein the second device determines the packetization scheme of said packetized media stream.

24.   The apparatus of claim 20, wherein said second device encodes and packetizes the known test signal.